

Ceramics

AND CERAMIC COATINGS



MONDAY 4 MARCH - FRIDAY 8 MARCH 2019

WHO SHOULD ATTEND?

The course is designed for scientists and engineers seeking an understanding of engineering ceramics and ceramic coatings. It will be suitable for graduates with no or limited ceramic experience wishing to widen the scope of their knowledge. There are no formal prerequisites but some basic knowledge of materials science will be assumed.

THE COURSE

The course will provide a detailed consideration of the fundamentals and underpinning science of the processing and properties of engineering ceramics and ceramic coatings. Topics such as wear, thermo-mechanical behaviour and design will be addressed. Where appropriate, examples of actual materials and components will be used to illustrate these generic principles and new developments will be identified. The lecture content will be reinforced and enhanced through tutorial/exercise class sessions.

OUTLINE OF THE COURSE

- Overview of Materials and Application Areas
- Processing of Bulk Ceramics
- Thin Film Growth
- Thick Film Processing
- Mechanical Properties of Ceramics and Coatings
- Thermo-Mechanical Behaviour
- Interfaces and Adhesion of Coatings
- Mechanical and Wear Test Methods
- New Developments in Wear Resistant Coatings
- Joining of Ceramics
- Designing with Ceramic
- Ferroelectric and Related Properties

MSC IN ADVANCED MATERIALS

This short course is offered as a module in our part-time or full-time Modular MSc Programme in Advanced Materials. Further details of our programme can be found on our web pages:

surrey.ac.uk/postgraduate/advanced-materials-msc-2018

COURSE DIRECTOR

The course team are led by Professor Robert Dorey who is a Chartered Engineer and Scientist, and Dr Mark Baker who is a Chartered Scientist. They are Fellows of the Institute of Materials, Minerals and Mining.

They will be joined by colleagues from across the University of Surrey's nanomaterials activity.

These short courses have been approved for "Professional Development" by IOM3 (Institute of Materials, Minerals and Mining).

CENTRE FOR ENGINEERING MATERIALS

The course is delivered from the Centre for Engineering Materials, home to the biggest concentration of materials researchers at Surrey with interests spanning all materials groups from the nanoscale through to macroscopic engineering structures. Across the University there are over 50 academics, residing in six engineering/ physical science departments, for whom materials is a primary research interest:

surrey.ac.uk/centre-engineering-materials

The research, which is recognised as being internationally excellent, spans topics as diverse as the production of graphene through to the mechanical testing of metre long sections of Victorian water mains. Much of the work is underpinned by the University's world-leading capability in characterisation, which comprises both facilities and expertise. Further, Surrey has a history of working in partnership with industry and a proven track record in delivering academically acclaimed and industrially relevant postgraduate courses.

The University is also home to the thriving, much-admired Engineering and Physical Sciences Research Council (EPSRC) Centre for Doctoral Training in Micro and NanoMaterials and Technologies which was established in 2009, and subsequently refunded in 2014, with awards amounting to over £9 million from the EPSRC and sponsorship of engineering doctorate students from over forty companies, to date:

surrey.ac.uk/minmat

KEY POINTS

For course calendar and online registration:
surrey.ac.uk/departments/mechanical-engineering-sciences/short-courses

If you have a question please call:
+44 (0)1483 686122

Courses run for one week from Monday morning to Friday afternoon.

Delegates may request a list of local accommodation





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The Institute of Materials,
Minerals and Mining

ACCREDITED PROGRAMME

Ceramics and Ceramic Coatings is also part of the
Advanced Materials MSc programme which is accredited by IOM3

We've made all reasonable efforts to ensure that the information in this publication was correct at the time of going to print in September 2018, but we can't accept any liability for any inaccuracies in the information published, and the information might change from time to time without notice. For the latest and most up-to-date information, please visit our website at surrey.ac.uk